

Notice of Allowability

Application No.

10/816,068

Examiner

Yubin Hung

Applicant(s)

SAKUYAMA ET AL.

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 03/31/04.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 8/5/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's representative Mr. Michael J. Mallie on 09/27/07.

2. The application has been amended as follows:

2.1 In the specification:

- **P. 3, paragraph 9, line 2:** replace "code a block" with *--a code block--*
- **P. 24, paragraph 122, line 1:** replace "time" with *--tile--*

2.2 In the claims:

- **Claim 16, line 1:** replace "recordable medium storing" with *--computer-readable medium storing computer-executable--*
- **Claim 20, lines 1-2:** replace "configured by executing program code stored on a computer-readable medium causing the computer" with *--configured with a computer-readable medium storing a computer program causing the computer--*
- **Claim 20, line 5:** replace "program code" with *--computer program--*
- **Claim 21, line 1:** delete "program code"

Reason for Allowance

3. Claims 1-23 as amended are allowed.
4. The following is an examiner's statement of reasons for allowance:
 - 4.1 Regarding claim 1, and similarly claims 8, 12, 16 and 20, closest art of record do not disclose nor fairly suggest all of its limitations. Specifically,
 - Bradley (US 5,710,835, submitted as part of the IDS) effectively processes tiles overlapped at the boundary to reduce tile boundary artifacts [Col. 6, lines 6-13]
 - Sano et al. (US 2003/0002742) lowers the quantization rate at coefficients near the boundary in response to the difference between two different wavelet transform results [Fig. 34; paragraphs 164-167]
 - Kharitonenko et al. ("A wavelet transform with point-symmetric extension at tile boundaries," IEEE T. Image Processing, V.11, No. 12, 12/02, pp. 1357-1364) uses point-symmetric extension at tile boundaries to reduce tiling artifacts
 - Hashimoto et al. ("JPEG2000 encoder for reducing tiling artifacts and accelerating the coding process," ICIP, V. 1, 14-17 Sep. 2003, pp. 645-648) determines truncation point (to discard code) based on the entropy and distortion of a coding path [P. 647, Sect. 3.2]

- Hashimoto et al. ("Tile boundary artifact reduction algorithms for tile size conversion of wavelet image," 10th ACM Int'l Conf. on Multimedia, 12/2003, pp. 97-105) reduces tiling artifacts by reconstructing needed pixels to generate compensated coefficients [P. 100, Sect. 3.3.1]
- Wei et al. ("Boundary artifact reduction using odd tile length and the low pass first convention (OTLPF)," Proceedings of SPIE, Vol. 4472 (2001), pp. 282-289) uses OTLPF along with tile overlap to reduce tiling artifacts [P. 287, Sect. 4]

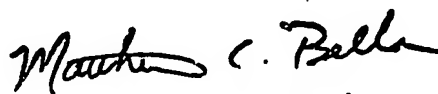
However, none of the recited references, alone or in combination, disclose or fairly suggest, among other things, make generally even the amount of code discarded in coding units that are in mutually adjacent relationship across a tile boundary.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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